

**TR RAI 5.7.8-17**

***Section 5.7.8 of the TR states, "Quarterly samples will be collected from drinking water and livestock wells, included in the groundwater sampling sites as shown in Figure 5.7-10." This statement implies there are more proposed well sampling locations than what is shown in Figure 5.7-8. NRC staff notes that numerous Inyan Kara wells in Appendix 2.2-A are close to well fields within the license boundary and are not included in Figure 5.7-10. Please specify all water well sampling locations.***

**TR RAI 5.7.8-17 Response**

The following describes the operational groundwater monitoring program proposed by Powertech. For a list of the water supply wells within 2 km of the project area, please refer to the response to TR RAI P&R-10. The following information will also be incorporated into the revised TR.

The operational groundwater monitoring program will include domestic wells, stock wells and wells located hydrologically upgradient and downgradient of proposed activity. Powertech proposes an alternate operational groundwater monitoring program to what is recommended in Regulatory Guide 4.14. The proposed operational monitoring program is designed to provide a comprehensive baseline evaluation of water supply wells located within 2 km of the proposed license boundary. This is a conservative approach, since the minimum search radius in Regulatory Guide 4.14 guidance is 2 km from the "proposed tailings area," which could be interpreted as the monitor well ring. Wells proposed for operational monitoring include domestic wells within 2 km of the project area, stock wells within the project area, and additional monitor wells in the alluvium, Fall River, Chilson and Unkpapa.

Prior to operations all domestic and stock wells within 2 km of the project area will be sampled to establish baseline water quality. A complete list of the wells is provided the response to TR RAI P&R-10. As discussed in Section 2.7 of the TR, Powertech has already monitored many of the wells included in the list as part of the baseline monitoring program. To meet the recommendations of Regulatory Guide 4.14, Powertech will ensure that all domestic and stock wells within 2 km of the project area are monitored quarterly for one year prior to operation (including monitoring already completed). All samples will be analyzed for constituents listed in Table 6.1-1 in the response to TR RAI 6.1-3, which meets the criteria listed in NUREG-1569 and Regulatory Guide 4.14.

**Operational Groundwater Monitoring - Domestic Wells**

Prior to operations, all domestic wells within the project area will be removed from private use. Depending on the well construction, location and screen interval, Powertech may continue to use the well for monitoring or plug and abandon the well. Plugging and abandonment procedures are described in the response to TR RAI P&R-9 and well replacement procedures are described in the response to TR RAI P&R-10.

During operations, Powertech will monitor all domestic wells within 2 km of the project boundary. Samples will be collected annually and analyzed for the constituents listed in Table 6.1-1 in the response to TR RAI 6.1-3.

#### Operational Groundwater Monitoring - Stock Wells

During the design of each well field, all nearby stock wells will be evaluated for the potential to be adversely affected by ISR operations or to adversely affect ISR operations. At a minimum, all stock wells within ¼ mile of well fields will be removed from private use prior to operation of nearby well fields. Depending on the well construction, location and screen interval, Powertech may continue to use the well for monitoring or plug and abandon the well. Plugging and abandonment procedures are described in the response to TR RAI P&R-9 and well replacement procedures are described in the response to TR RAI P&R-10.

During operation, Powertech will monitor all stock wells within the project area. Samples will be collected quarterly and analyzed for water level and the three excursion indicators of chloride, total alkalinity, and conductivity.

#### Operational Groundwater Monitoring - Monitor Wells

As recommended in Regulatory Guide 4.14, Powertech will monitor wells located hydrologically upgradient and downgradient of proposed activity as part of the operational groundwater monitoring program. A list of the monitor wells proposed for operational monitoring is provided in Table TR RAI 5.7.8-17-1. Monitor wells proposed for operational monitoring are depicted on Figures TR RAI 5.7.8-17-1, -2, -3, -4, -5, and -6.

The monitor wells will be monitored quarterly and analyzed for constituents listed in the revised Table 6.1-1.

Monitoring conducted as part of the pre-operational and operational monitoring program will be conditional upon land owner access and suitable conditions allowing proper collection of a sample. If access is not available during the time of monitoring, a second attempt will be made to collect a sample during the monitoring period. If a well cannot be accessed continually, Powertech will propose an alternate monitoring location or remove the well from the operational groundwater monitoring program.